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Spot-on storm forecasting

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The 2008 North Atlantic hurricane season was the fourth most active since detailed records began and this was accurately forecast by the Met Office.

There were 16 tropical storms, of which eight developed into hurricanes, throughout the season. An estimated $54 billion of damage was caused. In our forecast, issued on 18 June, we estimated 15 tropical storms for the July to November period — exactly the number observed during that time.

The Met Office, using a version of its climate model, has only issued the forecasts for the past two years and both have been on target.

Richard Graham, climate specialist at the Met Office, said: "For two years running our model has given accurate guidance on tropical storm numbers, and we aim to build on that success this year.

"Our capability in this emerging area shows how the science of climate change can be used to help us today, as well as in the future."

The Met Office uses a dynamical numerical model of the climate system, known as GloSea, to create the forecast. This technique of modelling atmospheric processes to predict tropical storm activity ahead of the season is a departure from traditional methods, which use statistical data.

Recent research, in collaboration with European partners, has shown dynamical systems such as GloSea are now challenging, or even overtaking, some proven statistical methods in this area.

Dr Graham added: "Importantly, GloSea is skilful in predicting the evolution of large-scale ocean-atmosphere processes and interactions that drive the degree of tropical storm activity. This gives us an edge in predicting tropical storm numbers."

See the full report here (PDF, 668 kb)

How we forecast tropical storms